#20/2

NR 17 2003 23

SEQUENCE LISTING

<110> Meulewater, Frank
 Cornelissen, Marc
 Van Eldik, Gerben
 Jacobs, John

<120> Methods and means for delivering inhibitory RNA to plants and applications thereof

<130> FKOSAT

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<170> PatentIn Ver. 2.0

RECEIVED

APR 2 1 2003

TECH CENTER 1600/2900

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<211> 3684

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence:cDNA copy of the nucleotide sequence of the genome of TNV-A

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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: cDNA copy of the nucleotide sequence of the genome of TMV-U1

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<213> Artificial Sequence

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<211> 1058
<212> DNA
<213> Artificial Sequence
<220>
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<211> 2346

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequenc : nucleotide
 sequence of the tomato phytoene desaturase (pds)
 encoding cDNA

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<211> 7096
<212> DNA
<213> Artificial Sequence
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<220>

<223> Description of Artificial Sequence: nucleotide
 sequence of the tobacco nitrate reductase (nia-2)
 encoding cDNA

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aggaagaget tgatteatgg getgagaaaa tteeagagag ggttaaagtt tggtatgtgg 6300
ttcaggattc tattaaagaa ggatggaagt acagcattgg ttttattaca gaagccattt 6360
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ctatgattca atttgctgtt aatccaaact tggagaagat gggctatgac attaaggatt 6480
ccttattggt gttctaattt taaaaacaaa acaatatctg caggaataaa ttttttttt 6540
ccccctatca gttgtacata ttgtatttgg tttatcaccc ccatgtacta cgtagtgttt 6600
gtagttetta catttttatt ttttagaatt tttttaaace ttaggatata aaggttttet 6660
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cgaaagttgt aatgtttacc atgacaaatt gtattcaatt cctcatggaa tagtaacatt 6780
gtgttcatgt gtcttcctgt aagcgatctt caaaatatca atgtatatat atagtaattg 6840
caaaccattg ttccttttcc cgatgtagtt aactactctt tctttagctt ctagtctctg 6900
gtgaatattt ttttttctat aactctttaa ttaatacggc cttaaataag agaaaagttt 6960
aaaccacgaa tatcattatg cagacgtata ggtaattaat ctactttttg aaaaaaaatc 7020
tattttcttt atgtggtcct tcaaaataat attctagaac cttttgtata ttccctttta 7080
acttctattt agtttt
                                                                  7096
```

<210> 8

<211> 1839

<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: nucleotide sequence of the tobacco nitrite reductase (nir-1) encoding cDNA

<400> 8 tttctattaa atttctggca ccttcattgc caaatccagc tagattttcc aagaatgctg 60 tcaagctcca cgcaactccg ccgtctgtgg cagcgccgcc agctggtgct ccagaggttg 120 ctgctgagag gctagaaccc agagttgagg aaaaagatgg ttattggata ctcaaggagc 180 agtttagaaa aggcataaat cctcaagaaa aggtcaagat tgagaagcaa cctatgaagt 240 tgttcatgga aaatggtatt gaagagcttg ctaagatacc cattgaagag atagatcagt 300 ccaagettac taaggatgat attgatgtta ggcttaagtg gcttggcctc ttccatagga 360 gaaagaacca atatgggcgg ttcatgatga gattgaagct tccaaatgga gtaacaacga 420 gtgcacagac tcgatacttg gcgagtgtga taaggaaata cgggaaagaa ggatgtgctg 480 atattacaac gaggcaaaat tggcagattc gtggagttgt actgcctgat gtgcccgaga 540 tactaaaggg actagcagaa gttgggttga ccagtttgca gagtggcatg gacaatgtca 600 ggaatccagt aggaaatcct cttgctggaa ttgatccaga agaaatagta gacacagggc 660 cttacactaa tttgctctcc caatttatca ctggcaattc acgaggcaat cccgcagttt 720 ctaacttgcc aaggaagtgg aatccgtgcg tagtaggctc tcatgatctt tatgaacatc 780 cccatatcaa cgatctcgcg tacatgcctg ccacgaaaga tggacgattt ggattcaacc 840 tgcttgtggg tgggttcttc agcgcaaaaa gatgtgatga ggcaattcct cttgatgcat 900 gggttccagc tgatgatgtt gttccggttt gcaaagcaat actggaagct tttagagatc 960 ttggtttcag agggaacaga cagaaatgta gaatgatgtg gttaatcgat gaactgggtg 1020 tagaaggatt cagggcagag gtcgagaaga gaatgccaca gcaagagcta gagagagcat 1080 ctccagagga cttggttcag aaacaatggg aaagaagaga ttatcttggt gtacatccac 1140 aaaaacaaga aggctacagc tttattggtc ttcacattcc agtgggtcgt gttcaagcag 1200 acgatatgga tgagctagct cgtttagctg atgagtatgg ttcaggagag atccggctta 1260 ctgtggaaca aaacattatt attcccaaca ttgagaactc aaagattgag gcactgctca 1320 aagagcctgt tctgagcaca ttttcacctg atccacctat tctcatgaaa ggtttagtgg 1380 cttgtactgg taaccagttt tgtggacaag ccataatcga gactaaagct cgttccctga 1440 tgataactga agaggttcaa cggcaagttt ctttgacacg gccagtgagg atgcactgga 1500 caggetgeec gaatacgtgt geacaagtte aagttgegga cattggatte atgggatgee 1560 tgactagaga taagaatgga aagactgtgg aaggcgccga tgttttctta ggaggcagaa 1620 tagggagtga ttcacatttg ggagaagtat ataagaaggc tgttccttgt gatgatttgg 1680 taccacttgt tgtggactta ctagttaaca actttggtgc agttccacga gaaagagaag 1740 aaacagaaga ctaataaaat ttagaatagt tggtgatttt gctgtgttca taacatgtaa 1800 tgtatgataa atcaatgcaa acatttctac ctacgtgag 1839

<210> 9 <211> 1294 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: cDNA of the beta-1,3-glucanase of Nicotiana plumbagenifolia

<400> 9

```
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taggagetea ateagtaggt gtttgetaeg gaatgetggg caacaaettg ceaceageat 120
cacaagttgt acaactgtac aagtcaaaaa acataagaag aatgaggctt tatgatccaa 180
atcaagcage tttacagget ttaagagget ccaacattga agttatgtta ggagttecca 240
attcagatct ccaaaacatt gctgctaacc cctcaaatgc aaataattgg gtccagagga 300
atgtcagaaa tttctggcca gccgttaaat ttaggtacat tgccgttgga aatgaagtca 360
gccctgtaac aggcacatct tcacttaccc gatatcttct tccggccatg aggaacattc 420
ggaatgcgat ttcttcagca ggtttgcaaa acaatatcaa agtctcaagt tctgtagaca 480
tgaccttgat tgggaactct tttccaccat cacagggttc gtttaggaac gacgttaggt 540
cgttcattga tccgattatt gggtttgtaa ggcgcataaa ttcgccttta ctcgttaaca 600
tttatcctta ttttagctat gctggtaatc cgcgcgatat ttctctcccc tatgctcttt 660
tcactgctcc aaatgtggtg gtacaagatg gttcacttgg atatagaaac ttatttgatg 720
caatgtegga tgetgtgtat getgeeetgt etegageegg agggggeteg atagagattg 780
ttgtgtccga gagtggctgg ccatctgctg gcgcatttgc cgcgacaaca aacaatgcag 840
caacttacta caagaactta attcagcatg ttaaaagggg tagtccaaga aggcctaata 900
aagtcattga gacctattta tttgctatgt ttgatgagaa taacaaaaac cctgaattgg 960
agaaacattt tggactcttt tcccccaaca agcagcccaa atatccactc agctttgggt 1020
tttcagatag atattgggac atttctgctg aaaataatgc tactgcagct tctctcataa 1080
gtgagatgtg ataagagagt tetetttaaa tatetttaca tggatggaaa aettagtace 1140
aataactaga ttgtttcttt ctttatgcaa ttttcttgta atgagagact agtacttgct 1200
ctctgtgtcc ttgtggagag taactagaga caaattaagc aaataacata aataattgag 1260
tgttgattct gcaatgataa atagaaaaaa aaaa
                                                                  1294
```

<210> 10

<211> 720

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: green fluorescent protein encoding regon

<400> 10

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<210> 11

<211> 1809

<212> DNA <213> Artificial Sequence <220> <223> Description of Artificial Sequence: beta-glucuronidase encoding region <400> 11 atggtccgtc ctgtagaaac cccaacccgt gaaatcaaaa aactcgacgg cctgtgggca 60 ttcagtctgg atcgcgaaaa ctgtggaatt gatcagcgtt ggtgggaaag cgcgttacaa 120 gaaagccggg caattgctgt gccaggcagt tttaacgatc agttcgccga tgcagatatt 180 cgtaattatg cgggcaacgt ctggtatcag cgcgaagtct ttataccgaa aggttgggca 240 ggccagcgta tegtgetgeg tttegatgeg gtcactcatt aeggcaaagt gtgggtcaat 300 aatcaggaag tgatggagca tcagggcggc tatacgccat ttgaagccga tgtcacgccg 360 tatgttattg ccgggaaaag tgtacgtatc accgtttgtg tgaacaacga actgaactgg 420 cagactatcc cgccgggaat ggtgattacc gacgaaaacg gcaagaaaaa gcagtcttac 480 ttccatgatt tctttaacta tgccggaatc catcgcagcg taatgctcta caccacgccg 540 aacacctggg tggacgatat caccgtggtg acgcatgtcg cgcaagactg taaccacgcg 600 tctgttgact ggcaggtggt ggccaatggt gatgtcagcg ttgaactgcg tgatgcggat 660 caacaggtgg ttgcaactgg acaaggcact agcgggactt tgcaagtggt gaatccgcac 720 ctctggcaac cgggtgaagg ttatctctat gaactgtgcg tcacagccaa aagccagaca 780 gagtgtgata tctacccgct tcgcgtcggc atccggtcag tggcagtgaa gggcgaacag 840 ttcctgatta accacaaacc gttctacttt actggctttg gtcgtcatga agatgcggac 900 ttacgtggca aaggattcga taacgtgctg atggtgcacg accacgcatt aatggactgg 960 attggggcca actcctaccg tacctcgcat tacccttacg ctgaagagat gctcgactgg 1020 gcagatgaac atggcatcgt ggtgattgat gaaactgctg ctgtcggctt taacctctct 1080 ttaggcattg gtttcgaagc gggcaacaag ccgaaagaac tgtacagcga agaggcagtc 1140 aacggggaaa ctcagcaagc gcacttacag gcgattaaag agctgatagc gcgtgacaaa 1200 aaccacccaa gcgtggtgat gtggagtatt gccaacgaac cggatacccg tccgcaagtg 1260 cacgggaata tttcgccact ggcggaagca acgcgtaaac tcgacccgac gcgtccgatc 1320 acctgcgtca atgtaatgtt ctgcgacgct cacaccgata ccatcagcga tctctttgat 1380 gtgctgtgcc tgaaccgtta ttacggatgg tatgtccaaa gcggcgattt ggaaacggca 1440 gagaaggtac tggaaaaaga acttctggcc tggcaggaga aactgcatca gccgattatc 1500 atcaccgaat acggcgtgga tacgttagcc gggctgcact caatgtacac cgacatgtgg 1560 agtgaagagt atcagtgtgc atggctggat atgtatcacc gcgtctttga tcgcgtcagc 1620 gccgtcgtcg gtgaacaggt atggaatttc gccgattttg cgacctcgca aggcatattg 1680 cgcgttggcg gtaacaagaa agggatcttc actcgcgacc gcaaaccgaa gtcggcggct 1740 tttctgctgc aaaaacgctg gactggcatg aacttcggtg aaaaaccgca gcagggaggc 1800 1809 aaacaatga <210> 12 <211> 411 <212> DNA <213> Artificial Sequence <220>

part of the region of a TMV-U2 variant comprising

<223> Description of Artificial Sequence: cDNA copy of

the origin of assembly

```
<400> 12
ccctcgccaa ttgaactcac tgaaaaagtt gttgatgagt tcgtagatga agtaccgatg 60
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aataagaaaa taaataatag tggtaagaag ggtttgaaag ttgaggaaat tgaggataat 180
gtaagtgatg acgagtctat cgcgtcatcg agtacgtttt aatcaatatg ccttatacaa 240
tcaactctcc gagccaattt gtttacttaa gttccgctta tgcagatcct gtgcagctga 300
tcaatctgtg tacaaatgca ttaggtaacc agtttcaaac gcaacaagct aggacaacag 360
tccaacagca atttgcggat gcctggaaac ctgtgcctag tatgacagtg a
<210> 13
<211> 198
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: cDNA copy of
      STMV leader region
<400> 13
agtaaaactt accaatcaaa agacctaacc aacaggactg tcgtggtcat ttatgctgtt 60
gggggacata gggggaaaac atattgcctt cttctacaag aggccttcag tcgccataat 120
tacttggcgc ccaattttgg gtttcagttg ctgtttccag ctatggggag aggtaaggtt 180
aaaccaaacc gtaaatcg
<210> 14
<211> 455
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:cDNA copy of
      STMV trailer region
<400> 14
gacaagtcgc cttggttatt tcgtgttgtt ttaactgaac ctcgacataa gccttttgga 60
tegaaggtta aacgateege teetegettg agettgagge ggegtatete ttatgteaac 120
agagacactt tggtctatgg ttgtataaca atagatagac tcccgtttgc aagattaggg 180
ttaacagatc ttgccgttag tctggttagc gcgtaaccgg ccttgattta tggaatagat 240
ccattgtcca atggctttgc caatggaacg ccgacgtggc tgtataatac gtcgttgaca 300
agtacgaaat cttgttagtg tttttccctc cacttaaatc gaagggtttt gttttggtct 360
tcccgaacgc atacgttagt gtgactaccg ttgttcgaaa caagtaaaac aggaaggggg 420
                                                                   455
ttcgaatccc tccctaaccg cgggtaagcg gccca
<210> 15
<211> 1971
```

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: cDNA copy of
 part of the genome of a TMV-U1 variant, comprising
 MP and CP genes

<400> 15

```
ggaaacactg tgattatagc tgcatgtttg gcctcgatgc ttccgatgga gaaaataatc 60
aaaggagcct tttgtggtga cgatagtctg ctgtacttcc caaagggttg tgagtttccg 120
gatgtgcaac actccgcgaa tcttatgtgg aattttgaag caaaactgtt taaaaaacag 180
tatggatact tttgcggaag gtatgtaata catcacgaca gaggatgcat tgtgtattac 240
gatcccctaa agttgatctc gaaacttggt gctaaacaca tcaaggattg ggaacacttg 300
gaggagttca gaaggtctct ttgtgatgtt gctgtttcgt tgaacaattg tgcgtattac 360
acacagttgg acgacgctgt atgggaggtt cataagaccg ccctccagg ttcgtttgtt 420
tataaaagtc tggtgaagta tttgtctgat aaagttcttt ttagaagttt gtttatagat 480
ggctctagtt gttaaaggaa aagtgaatat caatgagttt atcgacctga caaaaatgga 540
gaagatetta eegtegatgt ttaeceetgt aaagagtgte atgtgtteea aagttgataa 600
aataatggtt catgagaatg agtcattgtc agaggtaaac cttctcaaag gagttaagct 660
tattgatagt ggatacgtct gtttagccgg tttggtcgtc acgggcgagt ggaacttgcc 720
tgacaattgc agaggaggtg tgagcgtgtg tctggtggac aaaaggatgg aaagagccga 780
cgaggccact ctcggatctt actacacagc agctgcaaag aaaagatttc agttcaaggt 840
cgttcccaat tatgctataa ccacccagga cgcgatgaaa aacgtctggc aagttttagt 900
caatattaga aatgtaaaga tgtcagcggg tttctgtccg ctttctctgg agtttgtgtc 960
ggtgtgtatc gtttatagaa ataatataaa attaggtttg agagagaaga tcacaagtgt 1020
gagagatgga gggcccatgg aacttacaga agaagttgtt gatgagttca tggaagatgt 1080
ccctatgtca atcaggcttg caaagtttcg atctcgaacc ggaaaaaaga gtgatgtccg 1140
taaagggaaa attagtagta gtgatcggtc agcgccgaac aagaactata gaaatgttaa 1200
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ttaggaaatc agtttcaaac acaacaagct cgaactgtcg ttcaaagaca attcagtgag 1440
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aggtacaatg cggtattaga cccgctagtc acagcactgt taggtgcatt tgacactaga 1560
aatagaataa tagaagttga aaatcaggcg aaccccacaa ctgccgaaac gttagatgct 1620
actogtagag tagacgacgc aacggtggcc ataaggagcg ctataaataa tttagtagta 1680
gaattgatca gaggaaccgg atcttataat cggagctctt tcgagagctc ttctggtttg 1740
gtttggaact ctggtcctgc aacttgaggt agtcaagatg cataataaat aacggattgt 1800
gtccgtaatc acacgtggtg cgtacgataa cgcatagtgt ttttccctcc acttaaatcg 1860
aagggttgtg tettggateg egegggteaa atgtatatgg tteatataca teegeaggea 1920
cgtaataaag cgaggggttc gaatcccccc gttacccccg gtaggggccc a
                                                                  1971
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